
ON THE TYPIFICATION OF *BIGNONIA CRUCIGERA* L. (BIGNONIACEAE)

In the first edition of *Species Plantarum*, Linnaeus (1753: 624) proposed *Bignonia crucigera*, taking as his polynomial *Bignonia foliis conjugatis cirrhosis; foliolis cordatis; foliis imis ternatis*, a reorganized form of the phrase name he had first proposed in *Viridarium Cliffortianum* (1737a: 60) and which was used again in his *Hortus Cliffortianus* (1738: 317) and van Royen's *Florae Leydensis* (1740: 289). He also cited two synonyms, one from Gronovius (1739: 73), the other from Morison (1699: 612, erroneously cited as 672). Lastly, Linnaeus added a brief description: "Caulis volubilis, scaber, transversim dissectus crucem repraesentat," and the statement "Habitat in Virginia and australiori America."

There are no specimens in any of the Linnaean herbaria, nor in the Clifford herbarium (BM), associated with this name. There are, however, three elements associated with it. Two are linked to the synonymy, a specimen cited by Gronovius, *Clayton 100* (BM), and a Morison (1699) figure, s. 15. t. 3. f. 16.

The third element is a plate from Charles Plumier, not published until three years after *Species Plantarum* (Plumier, 1756), and hence not cited directly in the protologue. Plumier had made more than 1,200 drawings on trips to the West Indies in 1689–1690 and 1696–1697 (see Stafleu & Cowan, 1983). The Dutch naturalist Hermann Boerhaave had acquired copies of more than 500 of them, and it was these copies that Linnaeus examined while in Leiden in 1738 (Polhill & Stearn, 1976). Linnaeus recorded his observations in a copy of the first edition of *Genera Plantarum* (Linnaeus, 1737b), now in the library of the Linnean Society of London. While it was known that Linnaeus had examined Plumier plates prior to 1753, Polhill & Stearn (1976) were the first to establish the connection between the Plumier copies in Holland, the annotated *Genera Plantarum*, and the descriptions in *Species Plantarum*.

Linnaeus wrote the notes on the *Bignonia* plate opposite p. 179:

Bignonia scandens bifolia & trifolia, ligno crucea figurato. Plum. mss. Obs: caulis volubilis scaber, dissectis cruceum depictam exhibet.

He took the observation, with minor rephrasing,

for his descriptive sentence in 1753. Although the plate was not cited until the second edition of *Species Plantarum* (Linnaeus, 1763), where it was cited from the published source (Plumier, 1756), the commentary provides the necessary link confirming that the plate (now at Groningen) is original material, and that it influenced Linnaeus's concept of the species as published in 1753.

The name *Bignonia crucigera* has been associated with three taxa in as many genera, each of which is represented in the original material. The information, summarized here, is discussed in greater detail by Gentry (1975). The Gronovian specimen, *Clayton 100* (BM), is a collection of what is now known as *Bignonia capreolata* L., a connection recognized by Small (1903), who treated *B. capreolata* as a synonym of *B. crucigera*. The Morison illustration is of a fruit and single seed of *Bignonia echinata* Jacq. (= *Pithecoctenium crucigerum* (L.) A. Gentry). The Plumier plate illustrates *Tanaecium crucigerum* Seem. In his circumscription, Seemann (1856), citing Linnaeus (1763), excluded all of Linnaeus's synonymy for *B. crucigera* except Plumier (1756).

Gentry (1975) attempted to resolve the problem by typifying the name and thereby fixing its usage. Several of the options were unappealing. Selecting *Clayton 100* would have resulted in the displacement of the North American *Bignonia capreolata* and, writing prior to Polhill & Stearn (1976), it was understandable that Gentry should not have regarded the Plumier plate as original material. It therefore seemed impossible to typify the name in the sense of *Tanaecium crucigerum*, even if such a choice were deemed desirable.

Gentry argued that the most reasonable option was to return to Linnaeus's original concept of the species, reflected in the protologue in *Hortus Cliffortianus*. Linnaeus cited two synonyms there, that of Morison (1699), cited again in 1753, and a name from Miller's (1737) *Gardeners Dictionary*, *Bignonia scandens tetraphylla, fructu maximo echinato*. This appears to relate to the same sort of plant illustrated by Morison, and there is a Miller specimen at BM, possibly contemporary, belonging to this species. Gentry argued that the Miller specimen was an eligible syntype because it was tied to a citation in Linnaeus's original, that is, 1738,

description. The designation of the specimen rather than the illustration was based on Recommendation 7B-5, in the "Guide to the Determination of Types" then in effect (Stafleu et al., 1972), which stated that specimens were to be selected over illustrations.

Unfortunately, whatever its connection to *Hortus Cliffortianus*, the Miller specimen cannot, under the present Code (Greuter et al., 1988), be considered original material, as Linnaeus never saw it, and it is hence ineligible for selection as the lectotype. Moreover, the expanded synonymy in *Species Plantarum* indicates that Linnaeus's concept of *Bignonia crucigera* changed between 1738 and 1753, and there is no direct evidence that he still considered the Miller name a synonym by 1753.

Although the lectotypification on the Miller specimen cannot stand, one of the eligible elements, the Morison plate, illustrates the same sort of plant. Therefore, *Bignonia crucigera* L. is here lectotypified on *PseudoApocynum folliculis maximis obtusis*. . . , s. 15. t. 3. f. 16 (Morison, 1699). This typification preserves current usage of *Pithecotenium crucigerum* (L.) A. Gentry.

This study was supported in part by National Science Foundation Grant BSR-8812816. It is Scientific Article no. A-5076, Contribution No. 8136 of the Maryland Agricultural Experiment Station.

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